XR-4203

SERVICE MANUAL

East European Model

Model Name Using Similar Mechanism	XR-5050/5051
Tape Transport Mechanism Type	MG-36V-32

SPECIFICATIONS

Power amplifier section

Outputs: Speaker outputs (sure seal connectors)
Speaker impedance: 4 – 8 ohms
Maximum power output: 22 W + 22 W (at 4 ohms)*
*Measured at 14.4 V

Cassette player section

Tape track: 4-track 2-channel stereo
Frequency response: 30 – 15,000 Hz
Signal-to-noise ratio: 55 dB
Wow and flutter: 0.2% (WRMS)

Tuner section

FM
Tuning range: 65.0 – 74.0 MHz, 87.5 – 108.0 MHz
Antenna terminal: External antenna connector
Intermediate frequency: 10.7 MHz
Usable sensitivity: 15 dBf (75 ohms)
Selectivity: 70 dB at 400 kHz
Signal-to-noise ratio: 62 dB (stereo), 65 dB (mono)
Harmonic distortion at 1 kHz: 0.9% (stereo), 0.5% (mono)
Separation: 35 dB at 1 kHz
Frequency response: 30 – 15,000 Hz
Capture ratio: 3 dB

MW/LW
Tuning range: MW: 531 – 1,602 kHz
LW: 153 – 281 kHz
Antenna terminal: External antenna connector
Intermediate frequency: 450 kHz
Sensitivity: MW: 35 μV
LW: 60 μV

General

Output lead: Power antenna relay control lead
Tone controls: – 11 dB at 8 kHz
Loudness: + 8 dB at 100 Hz
+ 8 dB at 10 kHz
Power requirements: 12 V DC car battery (negative ground)
Dimensions: Approx. 178 × 50 × 160 mm (w/h/d)
Mounting dimensions: Approx. 182 × 53 × 145 mm (w/h/d)
Weight: Approx. 1.3 kg
Accessories supplied: Mounting hardware (1 set)

Design and specifications subject to change without notice.

FM/MW/LW CASSETTE CAR STEREO

SONY®

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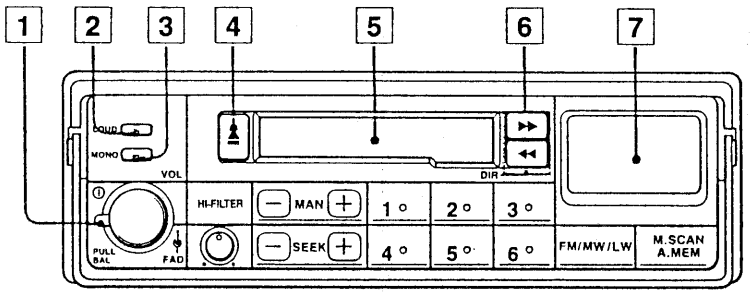
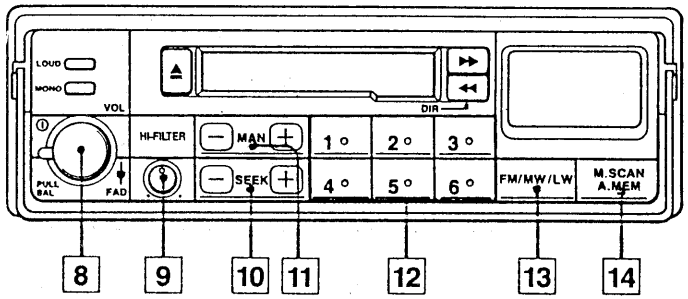
1-1. LOCATION AND FUNCTION OF CONTROLS





Refer to the page in ● for details.

[1] **FAD (fader) control**
Turn clockwise to decrease the volume of the rear speakers or counterclockwise to decrease the volume of the front speakers.

[2] **LOUD (loudness) button**
Press to reinforce bass and treble especially when listening at low level. When you activate the button, it turns to amber. To disengage the button, press it again.

[3] **MONO (monaural) button ❾**

[4] **⏏ (eject) button**
Press to stop the tape and take out the cassette.

[5] **Cassette insertion door**

[6] **◀◀ / ▶▶ (fast winding) buttons/DIR (tape transport direction change) buttons ❼**
During playback, depress ◀◀ or ▶▶ for fast winding, or press both ◀◀ and ▶▶ simultaneously to listen to the other side of the cassette.

[7] **Display window**

[8] **Power on·off switch/VOL (volume) control/PULL BAL (balance) control**

Power on·off switch	Press to turn on and off the unit.
VOL control	Turn clockwise to increase volume and counterclockwise to decrease.
PULL BAL control	While pulling the control, turn to adjust the balance of the left and right channel output.

[9] **HI-FILTER control**

[10] **SEEK −/+ button ❽**
Press − side to search for lower frequencies and + side for higher frequencies.

[11] **MAN (manual) −/+ button ❿**
Press to tune in the desired station manually.

[12] **Preset buttons ⓬**

[13] **FM/MW/LW band selector ❸**
Press to select the desired band, FM 1, FM 2, MW, or LW.

[14] **M. SCAN (memory scan)/A. MEM (automatic memory) button ⓫ ⓬**

Function	Operation
M. SCAN	Press for a moment to scan the preset stations automatically.
A. MEM	Press for more than two seconds to memorize the stations automatically.

This section is extracted from instruction manual.

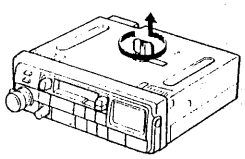
1-2. INSTALLATION

PRECAUTIONS

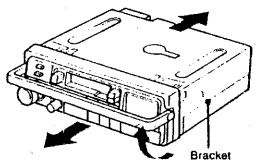
- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver.
- Avoid installing the unit where it should be subject to high temperatures, such as from direct sunlight or from hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

• TO INSTALL THE UNIT IN THE DASHBOARD

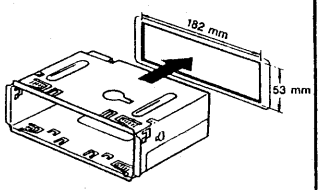
1 Remove the transit lock by turning it 90°.



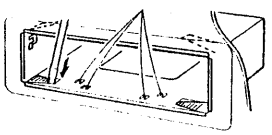
2 Remove the bracket.



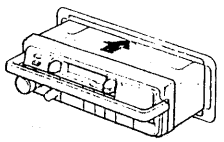
3 Install the bracket in the dashboard.



Bend these claws, if necessary.



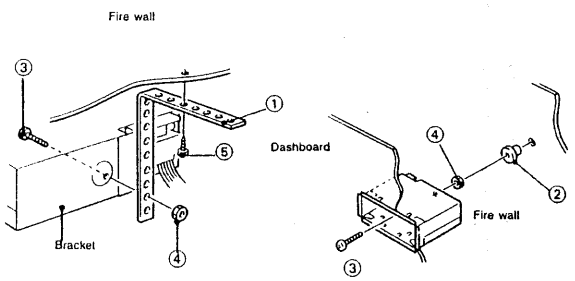
4 Secure the unit.



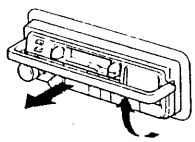
Push in the unit until it is locked firmly.

• TO SUPPORT THE UNIT

Example 1 Example 2



• TO REMOVE THE UNIT



This prevents your car stereo set from being stolen.

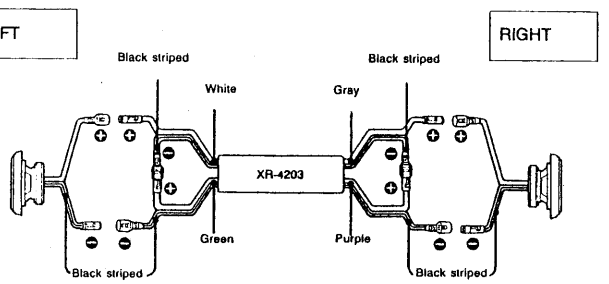
1-3. CONNECTIONS

CAUTION

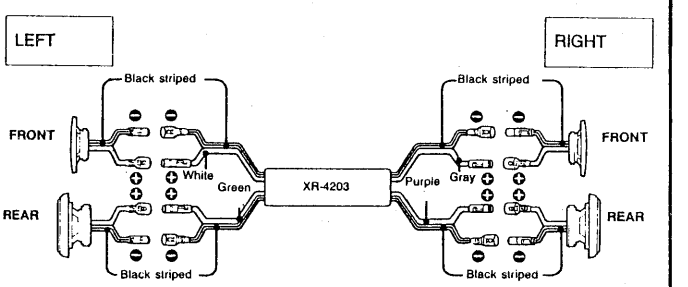
- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the red power input lead only after all other leads are connected. And be sure to connect it to the positive 12 V power terminal. It will be energized when the ignition key is set to the accessory position.
- **Run all ground wires to a common ground point.**

SPEAKER CONNECTION

2-speaker connection



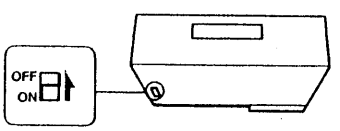
4-speaker connection



Notes on speaker connection

- Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.

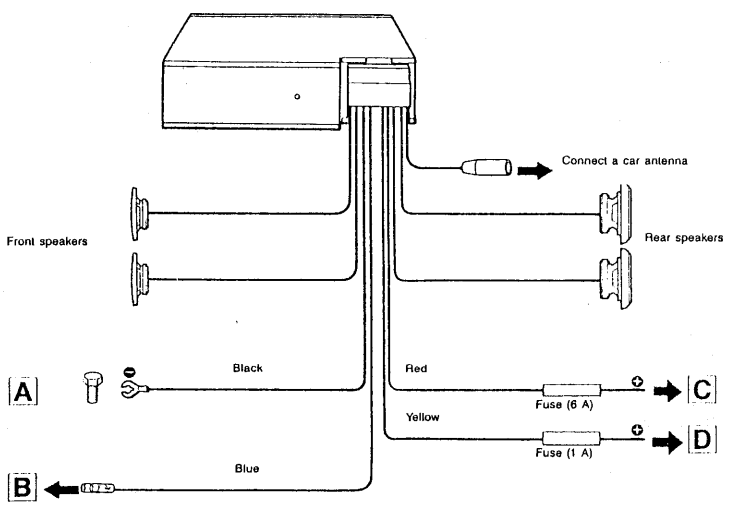
IF YOUR CAR IGNITION KEY DOES NOT HAVE THE ACESSORY POSITION



The illumination on the front panel is factory-set to be turned on even when not playing the unit. However, this setting may cause the car battery to run down when the unit is used in the car which has no accessory position. **To avoid this when using the unit in such a car, set the power select switch located on the bottom to OFF.** You can make the illumination turned off when not playing the unit.

Das Gerät ist werksseitig so voreingestellt, daß das Bedienungspult auch dann beleuchtet ist, wenn das Gerät nicht betrieben wird. Besitzt das Zündschloß Ihres Fahzeugs keine Zubehörposition, so ist die Beleuchtung ständig eingeschaltet und entzieht der Batterie Strom. **Stellen Sie in einem solchen Fall den Wahlschalter an der Unterseite auf OFF.** Bei ausgeschaltetem Gerät ist das Bedienungspult dann nicht mehr beleuchtet.

CONNECTION DIAGRAM



- A : to a metal point of the car
- B : to the power antenna relay control box (Maximum supply current 0.1 A)
- C : to the +12 V power terminal which is energized with the ignition key in the accessory position
- D : to the +12 V power terminal which is energized at all times

Cord color

Red: Power input lead
Yellow: Power input lead
Blue: Power antenna relay control lead
Black: Ground wire

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENT

No mechanical adjustments applied to this unit.

● Torque Measurement

Mode	Torque Meter	Torque
FWD	CQ-102B	40 to 75 g · cm (0.56 to 1.04 oz · inch)
REV	CQ-102RB	
Back tension	CQ-102B	1.5 to 5 g · cm (0.02 to 0.07 oz · inch)
FF	CQ-102A	45 to 150 g · cm (0.62 to 2.08 oz · inch)
REW		

2-2. ELECTRICAL ADJUSTMENTS

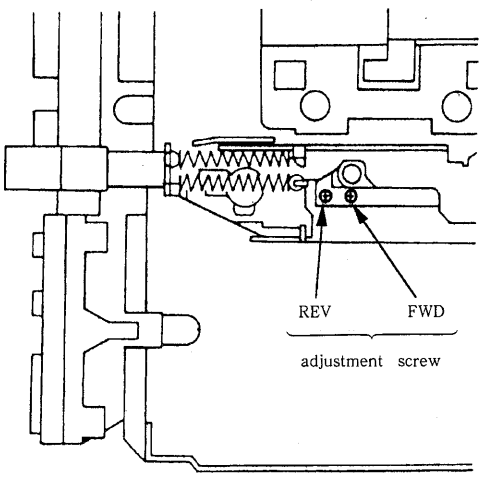
Note : The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Power-supply voltage is +14.4V DC as per Ad Hoc recommendation.
- Switches and controls should be set as follows unless otherwise specified.

PUSH RADIO switch : RADIO
PULL BALANCE control : center click

TAPE SECTION

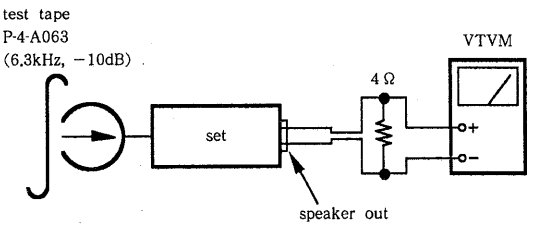
Adjustment Location :



Playback Head Azimuth Adjustment

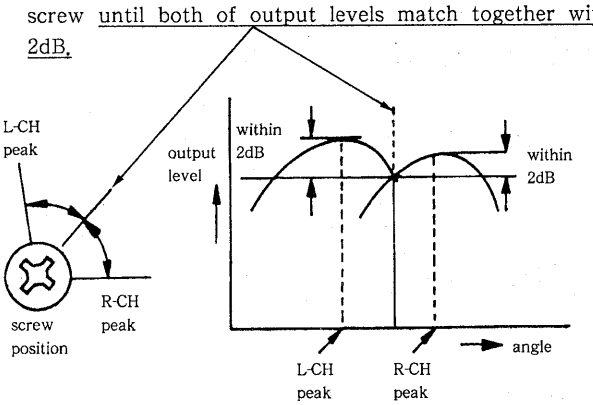
Procedure :

1. Mode : playback

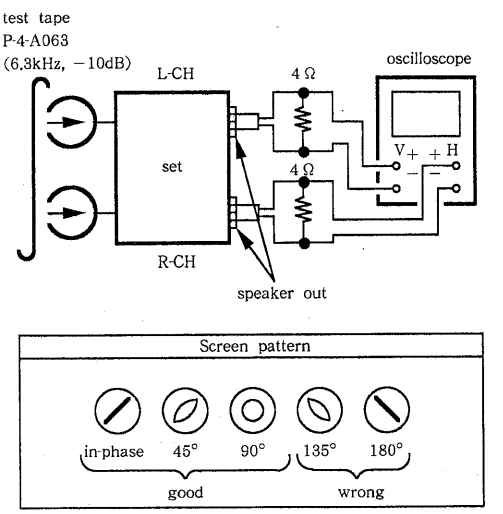


Adjust for forward (▶) direction and reverse (◀) direction.

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 2dB.



3. Phase Check
Confirm that phase difference between L-channel and R-channel is within 90°



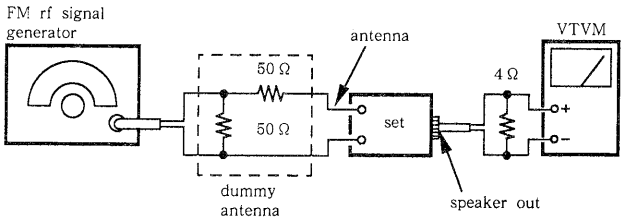
4. Repeat the above adjustment for reverse playback mode.
5. After the adjustment, lock the screw with locking compound.

FM SECTION

FM Stereo Separation Adjustment

Setting :

BAND : FM Stereo
Frequency : 98MHz



Carrier frequency : 98MHz
Output level : 66dB (2mV)
Modulation : 1kHz
main : 33.75kHz dev.
sub : 33.75kHz dev.
19kHz pilot : 7.5kHz dev.

Procedure :

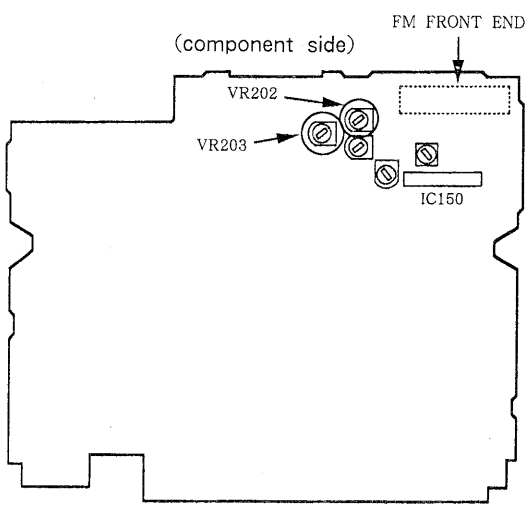
1. Fully turn VR203 counterclockwise.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust VR202 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust VR202 for minimum reading.

L-CH stereo separation : Ⓐ - Ⓑ
R-CH stereo separation : Ⓒ - Ⓓ
The separations of both channels should be equal.

2. Adjust so that separation is maximized.
3. Set the output level of a signal generator to 125.9 μ V/m (42dB) and adjust VR203 so that separation is 10dB.

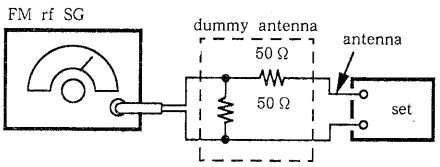
Adjustment Location : main board



FM Discriminator Adjustment

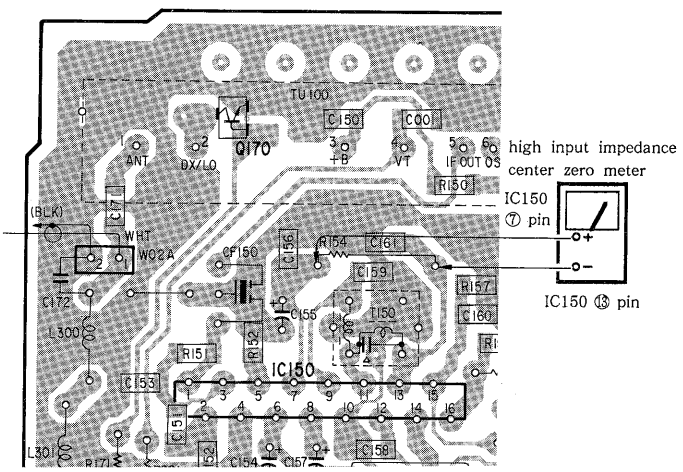
Setting :

BAND : FM MONO



Carrier frequency : 98MHz
Output level : 66dB (2mV)
Modulation : 1kHz, 75kHz deviation (100%)

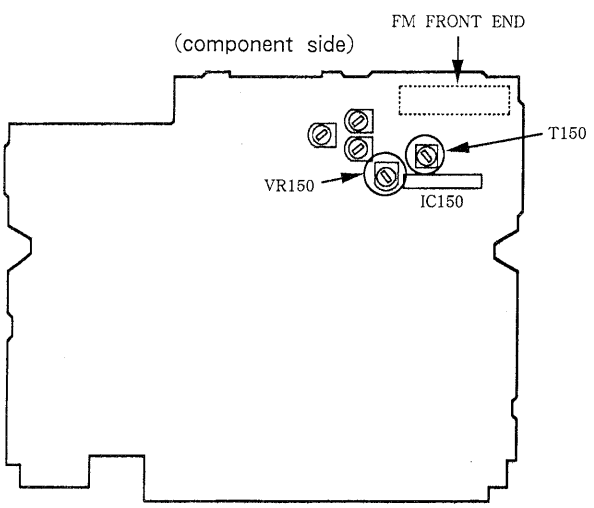
main board (conductor side)



Procedure :

1. Slowly adjust the core of T150 to obtain a zero (0) V reading on high impedance center zero meter.

Adjustment Location : main board

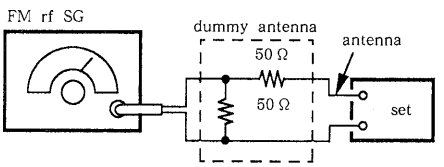


FM Auto-scan Stop Level Adjustment

Note : Be sure to perform this adjustment before "AM Auto-scan Stop Level Adjustment".

Setting :

BAND : FM MONO
Frequency : 98MHz

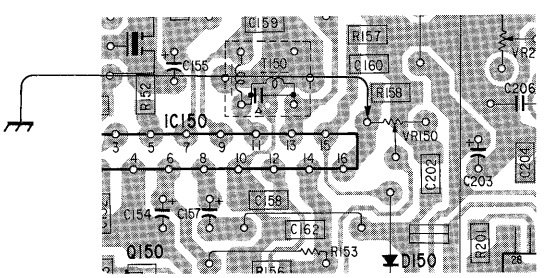


Carrier frequency : 98MHz
Modulation : no modulation
Output level : 26dB

Procedure :

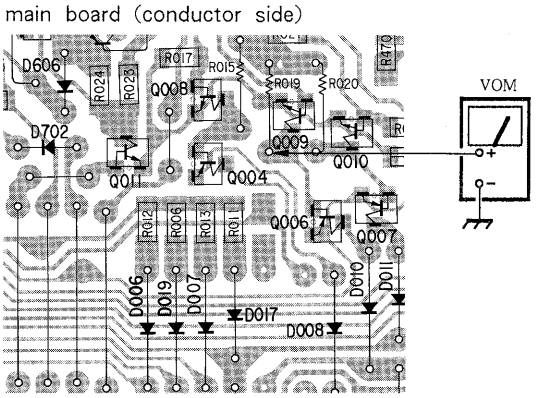
1. Using a lead wire, connect IC150 ⑯ pin and GND.

main board (conductor side)



2. Adjust VR150 at the point where the VOM reading changes from low to high.

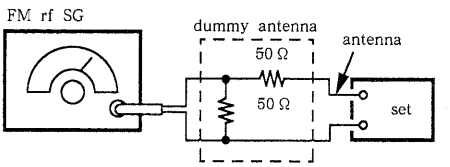
main board (conductor side)



3. After adjustment is completed remove the lead wire.

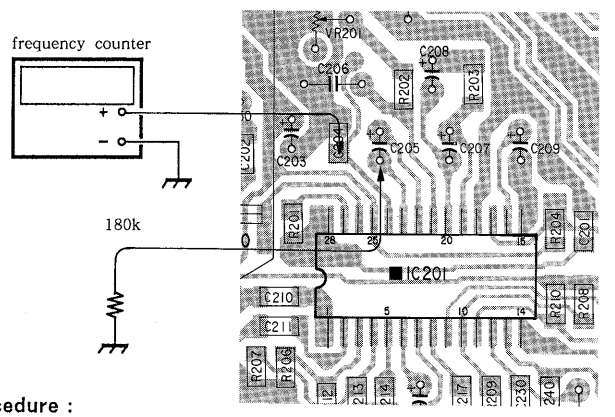
VCO Adjustment

Setting :



Carrier frequency : 98MHz
Modulation : no modulation
Output level : 66dB (2mV)

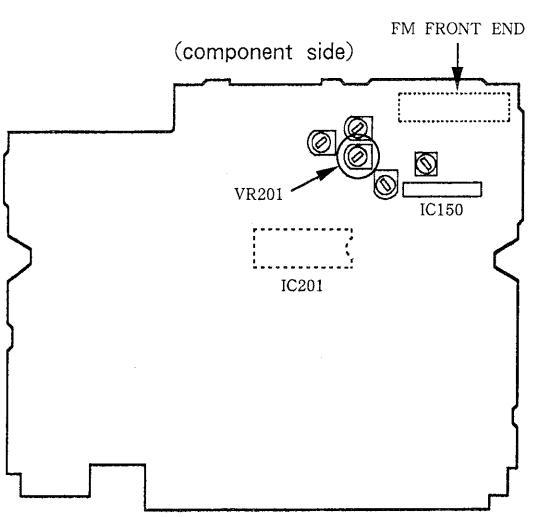
main board (conductor side)



Procedure :

1. Using a resistor (180k Ω), connect IC201 ㉓ pin and GND.
2. Push the TUNING 〈+, −〉 button for 98MHz.
3. Adjust VR201 for 19kHz±30Hz reading on the frequency counter.
4. After adjustment is completed remove the resistor (180k).

Adjustment Location : main board



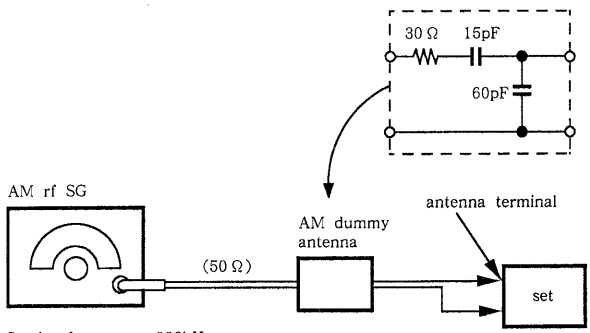
AM SECTION

AM Auto-scan Stop Level Adjustment (MW, LW)

Note : Be sure to perform this adjustment after "FM Auto-scan Stop Adjustment".

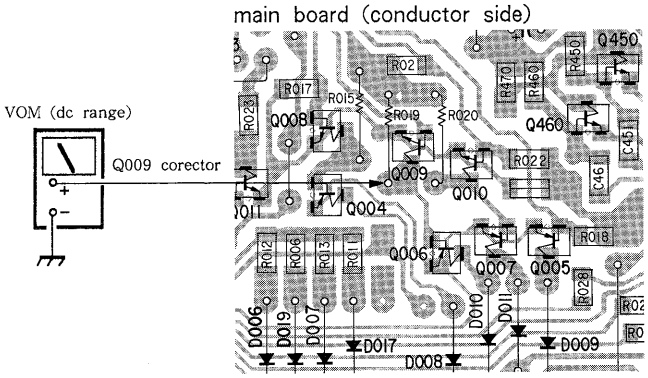
Setting :

Band : AM
Frequency : 999kHz



Carrier frequency : 999kHz
Output level : 30dB
Modulation : no modulation

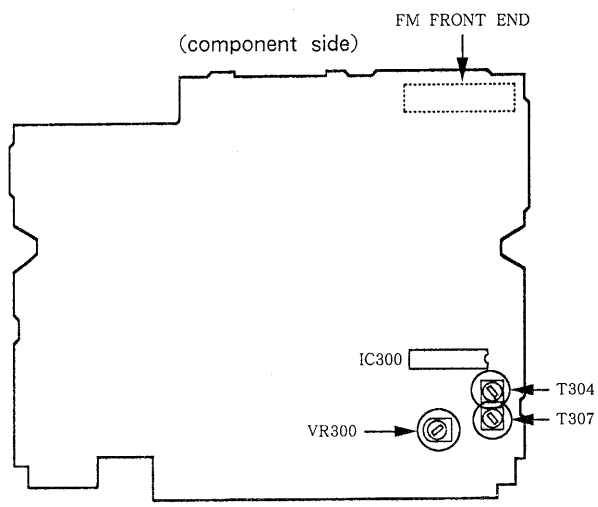
main board (conductor side)



Procedure :

1. Adjust VR300 at the point where the VOM reading changes from low to high.

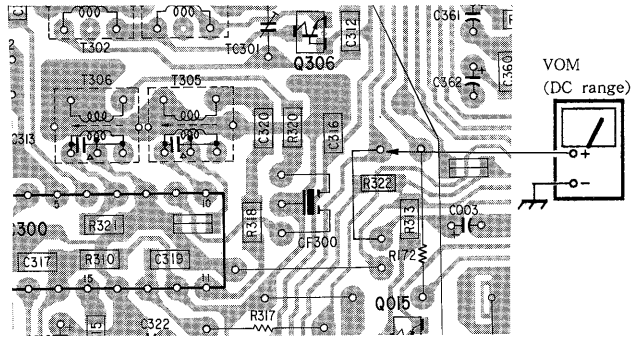
Adjustment Location : main board



MW OSC Voltage Adjustment

Setting :

main board (conductor side)



Procedure :

1. Set BAND selector switch to MW.
2. Adjust T307 so that the VOM reading satisfies the specification.

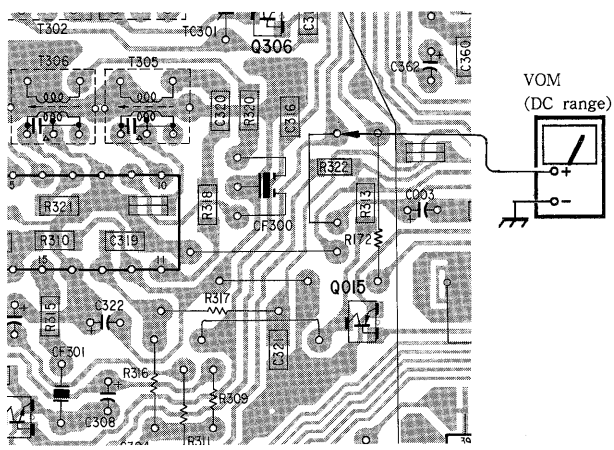
Specification

531kHz : 1.1－1.2V
1,620kHz : 7.0－8.0V

LW OSC Voltage Adjustment

Setting :

main board (conductor side)



Procedure :

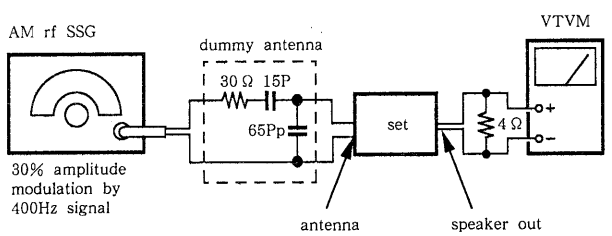
1. Set BAND selector switch to LW.
2. Adjust T304 so that the VOM reading satisfies the specification.

Specification

153kHz : 2－2.1V

AM IF, Tracking Adjustment

Setting :



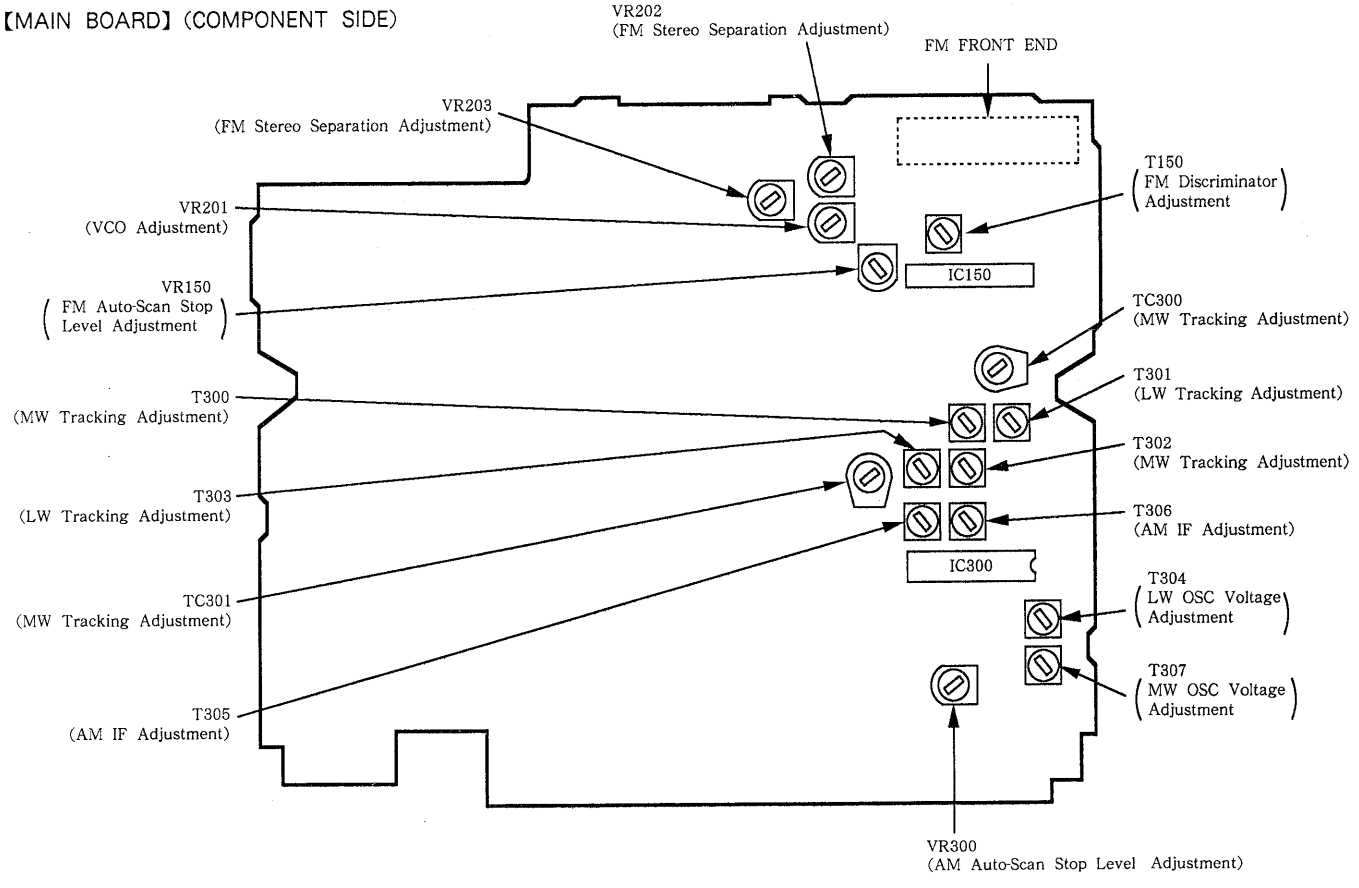
AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T305, 306	459kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T300, 302	531kHz
TC300, 301	1,404kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T301, 303	153kHz

ADJUSTMENT LOCATION

【MAIN BOARD】(COMPONENT SIDE)



SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

FA1A4P-L34
FN1F42-M64
2SC1623-L5L6
2SA1162-G

GL-1HY1

2SB810-F-HFE
2SD1020F-HFE

HZ6C2L

2SC2001-LK

RD9.1ES-B2
RD10ES-B2
RD16ESB
RD5.1ES-B1
1SR139-400
1SS119

2SC1162-C
2SA1162-G

U05G

2SK427

— 12 —

• SEMICONDUCTOR LOCATION

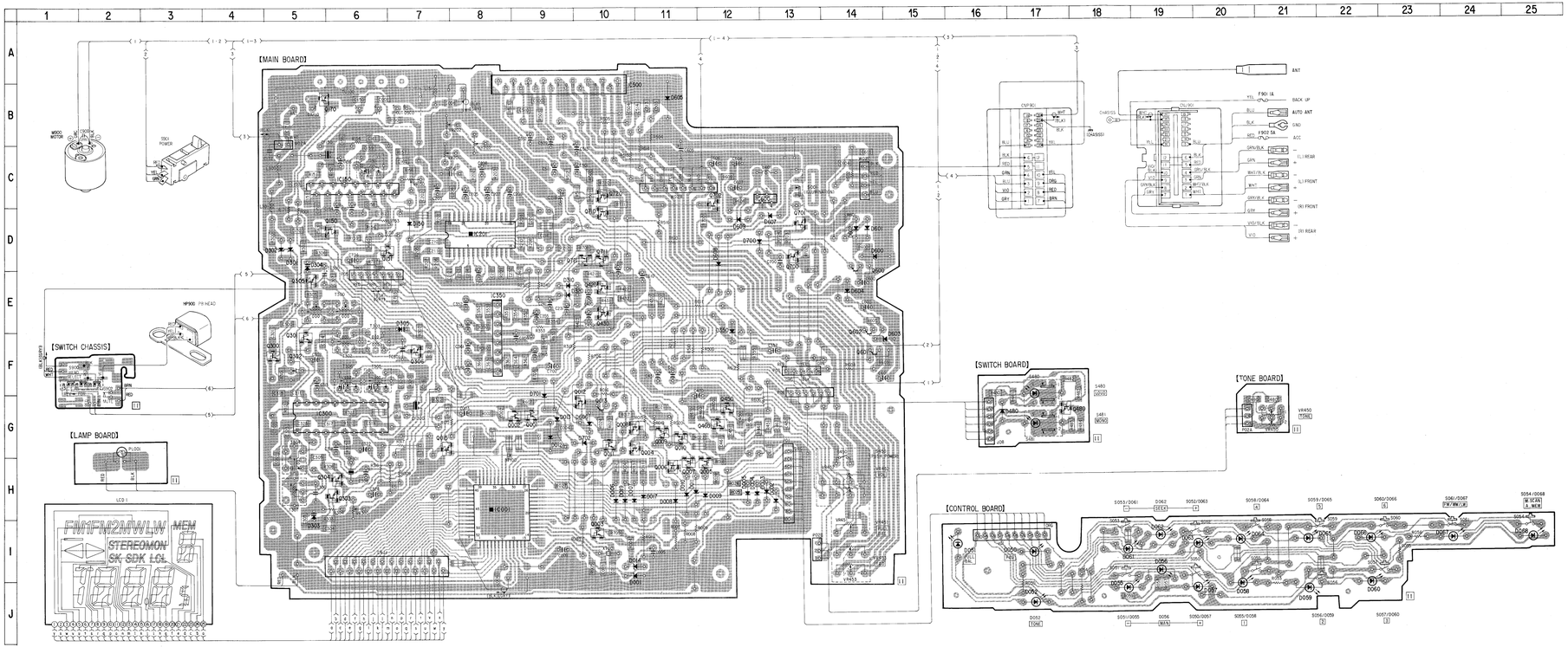
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D001	I-10	D302	D-5	Q006	H-11
D002	H-13	D303	H-5	Q007	H-11
D003	H-13	D304	D-5	Q008	G-10
D004	H-12	D305	E-7	Q009	G-11
D005	H-12	D310	E-9	Q010	G-11
D006	H-10	D320	E-9	Q011	G-10
D007	H-10	D350	E-12	Q012	G-10
D008	H-11	D480	G-16	Q013	G-10
D009	H-12	D600	D-14	Q015	G-7
D010	H-11	D601	D-14	Q150	D-6
D011	H-11	D602	D-14	Q151	D-6
D012	G-9	D603	F-15	Q170	B-5
D013	G-9	D604	E-14	Q300	F-5
D014	I-10	D605	B-11	Q301	F-5
D017	H-11	D606	G-10	Q302	F-5
D019	H-10	D607	D-13	Q303	H-6
D050	I-17	D608	D-12	Q304	H-6
D051	I-16	D609	D-12	Q305	E-5
D052	J-17	D700	D-12	Q306	F-7
D055	J-18	D701	F-9	Q420	E-10
		D702	G-10		
D056	I-19			Q430	E-10
D057	J-20			Q450	G-12
D058	J-20	IC001	H-8	Q460	G-12
D059	J-21	IC150	C-6	Q480	G-17
D060	J-22	IC201	D-8	Q600	D-14
		IC300	G-6		
D061	I-18	IC350	E-8	Q601	F-14
D062	I-19			Q602	E-14
D063	I-20	IC500	B-9	Q700	D-13
D064	I-20	IC600	C-13	Q701	D-13
D065	I-21			Q702	C-12
D066	I-22	Q001	G-9	Q710	D-10
D067	I-24	Q002	G-9	Q711	D-10
D068	I-25	Q003	I-10	Q720	C-10
D150	D-7	Q004	G-10	Q721	D-10
D301	D-5	Q005	H-12		

Note :

- O— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ▨ : Pattern on the side which is seen.
- ▭ : Chip components extracted from the rear side.

— 13 —

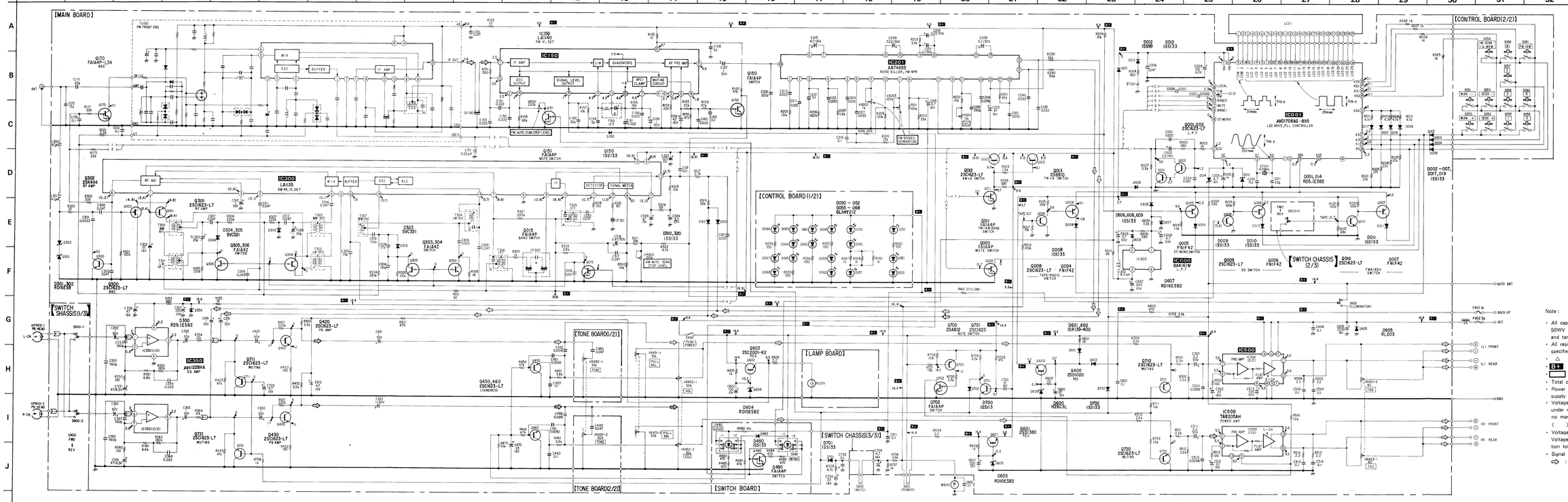
3-2. PRINTED WIRING BOARDS



— 14 —

— 15 —

— 16 —

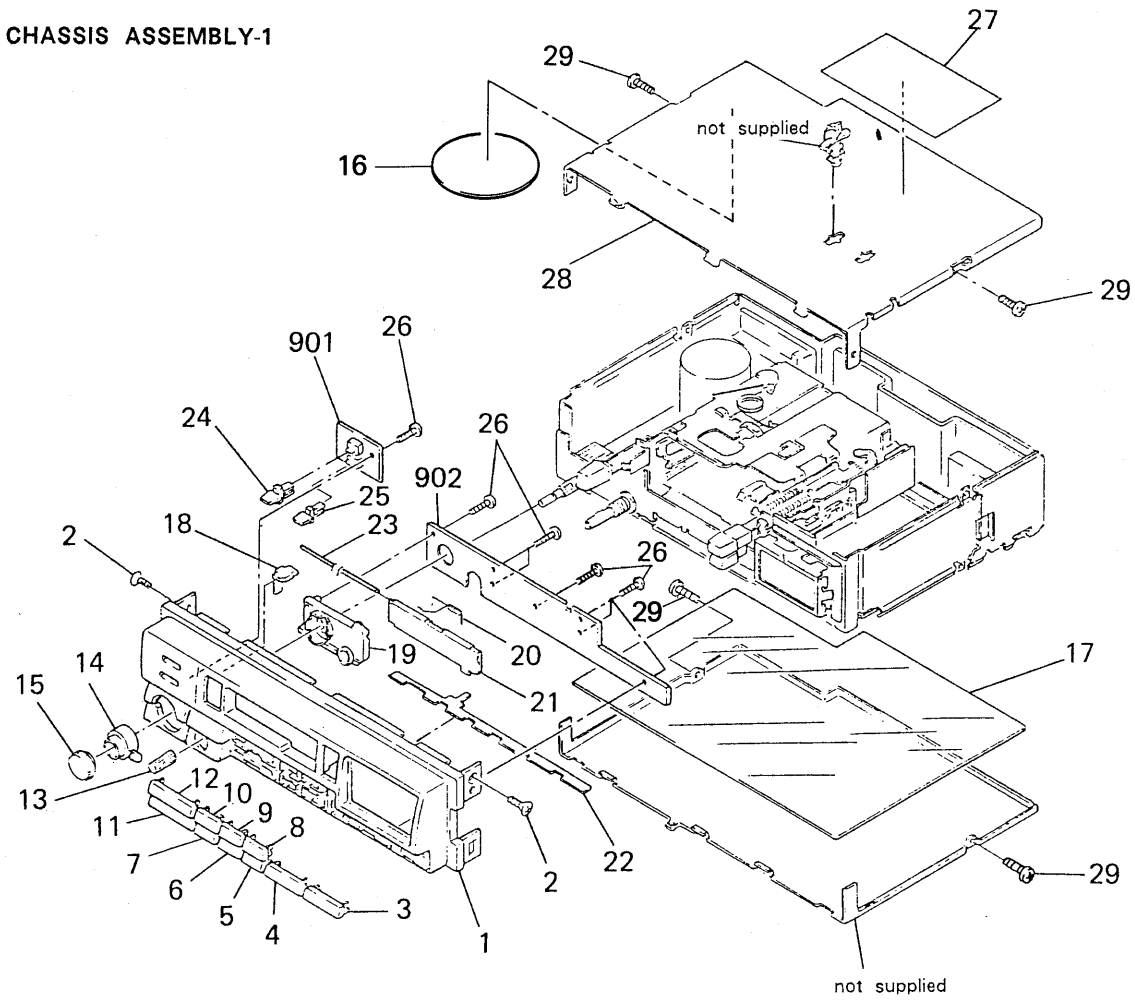

[MAIN BOARD]
[CONTROL BOARD(2/2)]
[CONTROL BOARD(1/2)]
[SWITCH CHASSIS(1/3)]
[SWITCH CHASSIS(2/3)]
[SWITCH CHASSIS(3/3)]
[TONE BOARD(1/2)]
[TONE BOARD(2/2)]
[LAMP BOARD]
[SWITCH BOARD]
IC150 LA1140 FM I.F. SET
IC151 AN7655 NOISE KILLER, FM MPX
IC000 LA1135 AM RF, I.F. DET
IC100 μPD1228HA 5W AMP
IC350 BA6418M L.P.F.
IC500 TA8205AH POWER AMP
IC600 BA6418M L.P.F.
IC001 μPD1701A-B95 LED DRIVE PLL CONTROLLER
Q170 FA1A4P-L34 AGC
Q150 FA1A4P SWITCH
Q151 FA1A4P MUTE SWITCH
Q001 FA1A4P FM/AM BAND SWITCH
Q003 FA1A4P MUTE SWITCH
Q004 FN1F4Z TAPE/RADIO SWITCH
Q005 FN1F4Z ST/MONO SWITCH
Q006 FN1F4Z
Q007 FN1F4Z
Q009 FN1F4Z FWD/REV SWITCH
Q015 FA1A4P BAND SWITCH
Q302 2SK694 RF AMP
Q301 2SC1623-L7 RF AMP
Q303,304 FA1A42 SWITCH
Q305,306 FA1A42 SWITCH
Q420 2SC1623-L7 PB AMP
Q430 2SC1623-L7 PB AMP
Q421 2SC1623-L7 MUTING
Q431 2SC1623-L7 MUTING
Q450,460 2SC1623-L7 LOUDNESS
Q480 FA1A4P SWITCH
Q602 2SC2001-K2
Q700 2SA812
Q701 2SC1623
Q702 FA1A4P SWITCH
Q720 2SC1623-L7 MUTING
Q730 2SC1623-L7 MUTING
D302 RD16ES8
D303 SVC321
D304,305,306 SVC321
D307 MA150
D308 MA150
D309 MA150
D310,320 1SS133
D330,302 RD16ES8
D050 – 052 D055 – 058 GL1HY2J2
D001,002 2SC2623-L7 L.P.F.
D001,014 RD5.1ES2
D002 – 007, D07, 019 1SS133
D009 1SS133
D010 1SS133
D011 1SS133
D012 1S599
D013 1SS133
D606,608,609 1SS133
D607 RD16ES8Z
D008 1SS133
D600 H2BC3L
D601,602 RB160-60
D603 RD0ES8Z
D604 RD0ES8Z
D605 RL203
D700 1SS133
D701 1SS133
D702 1SS133
D720 2SD1380
D730 1SS133
D800 (POWER)
D801 (MUTE)
D900 (ILLUMINATION)
D901 (ILLUMINATION)
D902 (ILLUMINATION)
D903 (ILLUMINATION)
D904 (ILLUMINATION)
D905 (ILLUMINATION)
D906 (ILLUMINATION)
D907 (ILLUMINATION)
D908 (ILLUMINATION)
D909 (ILLUMINATION)
D910 (ILLUMINATION)
D911 (ILLUMINATION)
D912 (ILLUMINATION)
D913 (ILLUMINATION)
D914 (ILLUMINATION)
D915 (ILLUMINATION)
D916 (ILLUMINATION)
D917 (ILLUMINATION)
D918 (ILLUMINATION)
D919 (ILLUMINATION)

SECTION 4
EXPLODED VIEWS

NOTE:

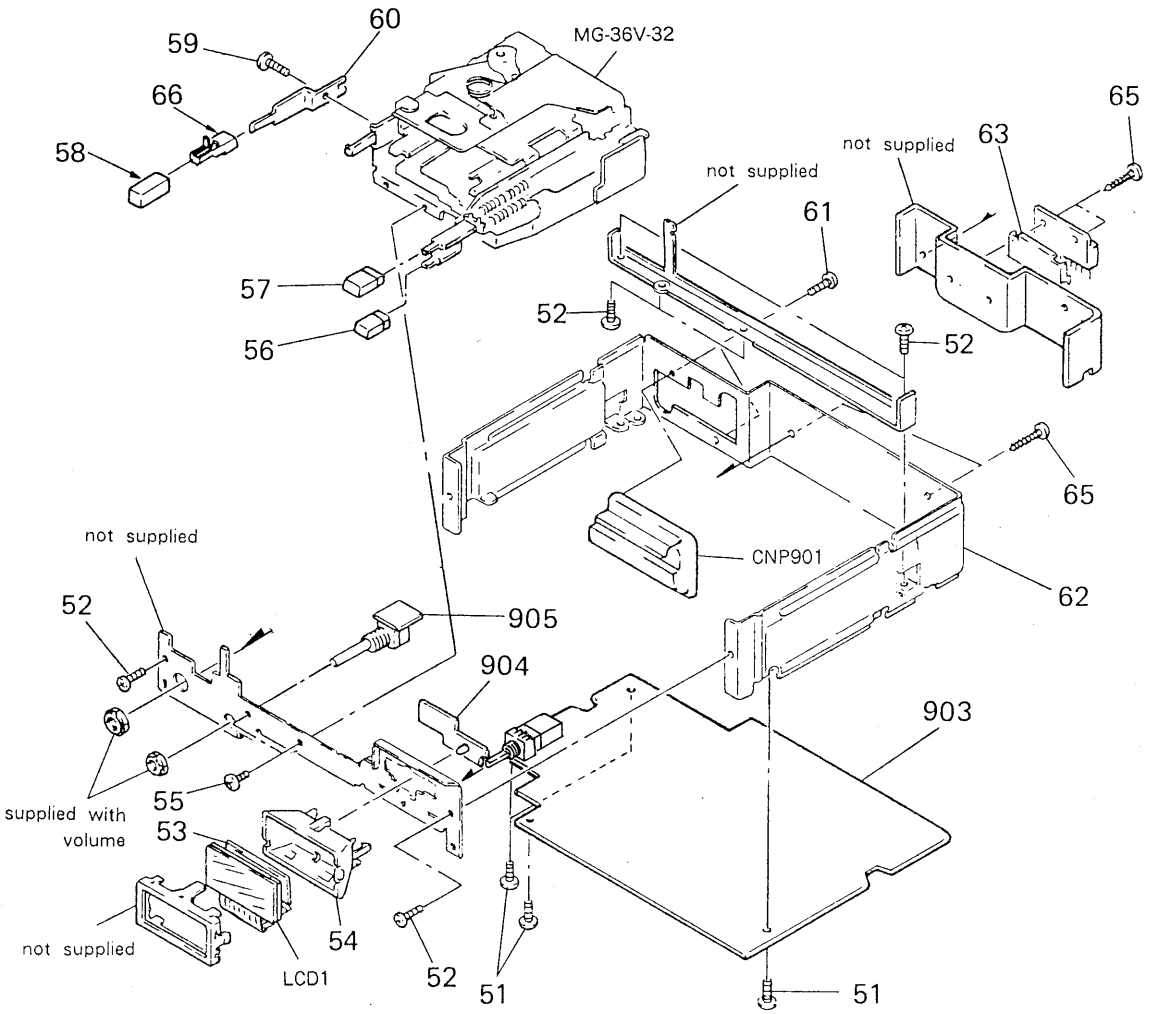
- –XX, –X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE)....(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

4-1. CHASSIS ASSEMBLY-1



No.	Part No.	Description	Remarks
1	3-396-238-11	PANEL	
2	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
3	3-396-223-01	BUTTON (A.MEM)	
4	3-396-225-01	BUTTON (FM/MW/LW)	
5	3-396-217-01	BUTTON (M6)	
6	3-396-218-01	BUTTON (M5)	
7	3-396-219-01	BUTTON (M4)	
8	3-396-220-01	BUTTON (M3)	
9	3-396-221-01	BUTTON (M2)	
10	3-396-222-01	BUTTON (M1)	
11	3-396-226-01	BUTTON (SEEK)	
12	3-396-227-01	BUTTON (MANU)	
13	X-3393-006-1	KNOB	
14	3-393-007-01	KNOB, FADER	
15	X-3393-005-1	VOL KNOB	
16	*3-396-248-01	PLATE, SHIELD	
17	*3-396-230-01	ILSULATOR	
18	*3-396-204-01	ILLUMINATOR (EJ)	
19	*3-396-216-01	ILLUMINATOR (VR)	
20	3-396-211-01	SPRING	
21	X-3362-114-1	DOOR ASSY	
22	*3-396-203-01	PLATE, DISCHARGE	
23	3-350-709-01	SHAFT, CASSETTE DOOR	
24	3-396-209-11	BUTTON (MONO), FUNCTION	
25	3-396-210-11	BUTTON (LOUD), FUNCTION	
26	7-685-103-01	SCREW +P 2X5 TYPE4	
27	*3-363-023-01	LABEL, MODEL NUMBER (EE)	
28	*3-396-231-01	CASE (T)	
29	7-682-547-04	SCREW +BVTT 3X6 (S)	
901	*1-636-636-11	PC BOARD, SWITCH	
902	*1-636-637-11	PC BOARD, CONTROL	

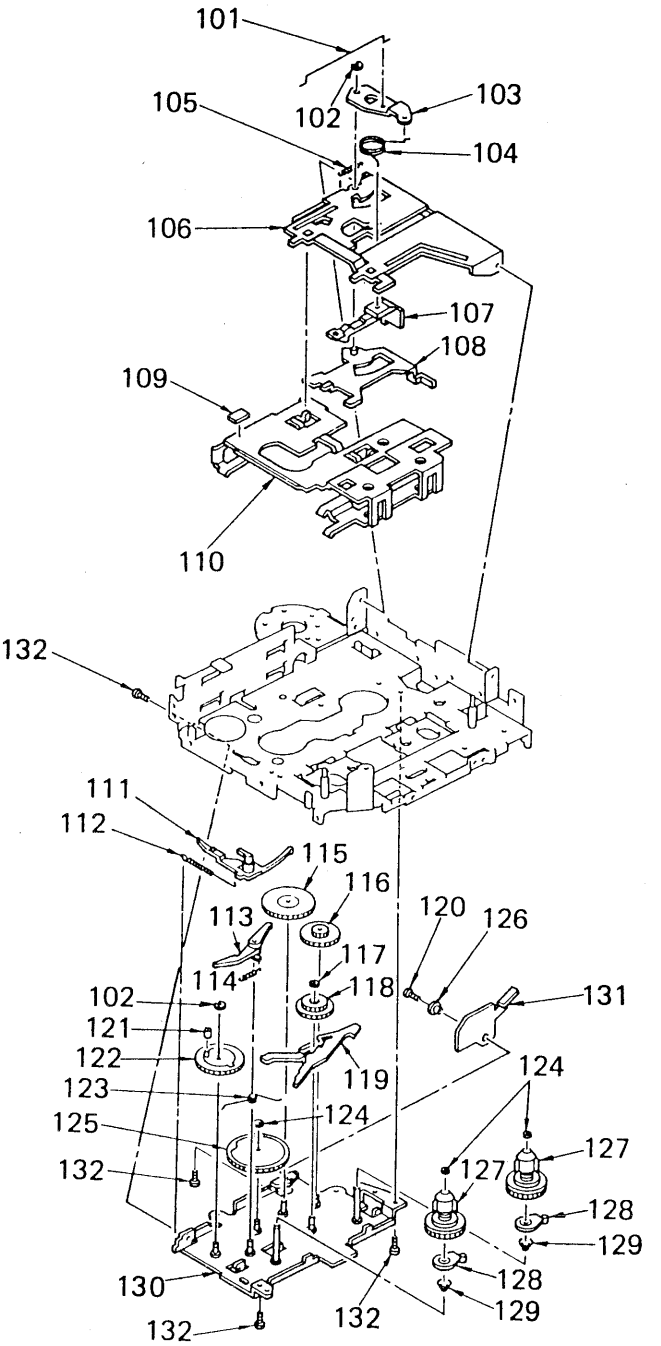
4-2. CHASSIS ASSEMBLY-2



No.	Part No.	Description	Remarks
51	7-682-547-04	SCREW +BVTT 3X6 (S)	
52	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
53	*3-396-207-01	PLATE, LIGHT	
54	*3-396-214-01	HOUSE, LAMP	
55	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
56	X-3396-203-1	BUTTON ASSY, REW	
57	X-3396-204-1	BUTTON ASSY, FF	
58	3-396-232-01	BUTTON, EJ	
59	7-627-556-08	SCREW +P 2.6X2.8	
60	*3-396-206-01	LEVER, EJ	

No.	Part No.	Description	Remarks
61	7-682-548-04	SCREW +B 3X8	
62	*X-3396-201-1	CHASSIS ASSY, MAIN	
63	*3-363-131-01	FIXER, IC	
65	7-685-146-01	SCREW +P 3X8 TYPE4	
66	3-396-245-01	ILLUMINATOR (EB)	
903	*A-3273-220-A	MOUNTED PCB, MAIN	
904	*1-636-638-11	PC BOARD, LAMP	
905	*1-636-635-11	PC BOARD, TONE	
CNP901	1-575-499-11	CARD (WITH CONNECTOR)	
LCD1	1-808-963-11	DISPLAY PANEL, LIQUID CRYSTAL	

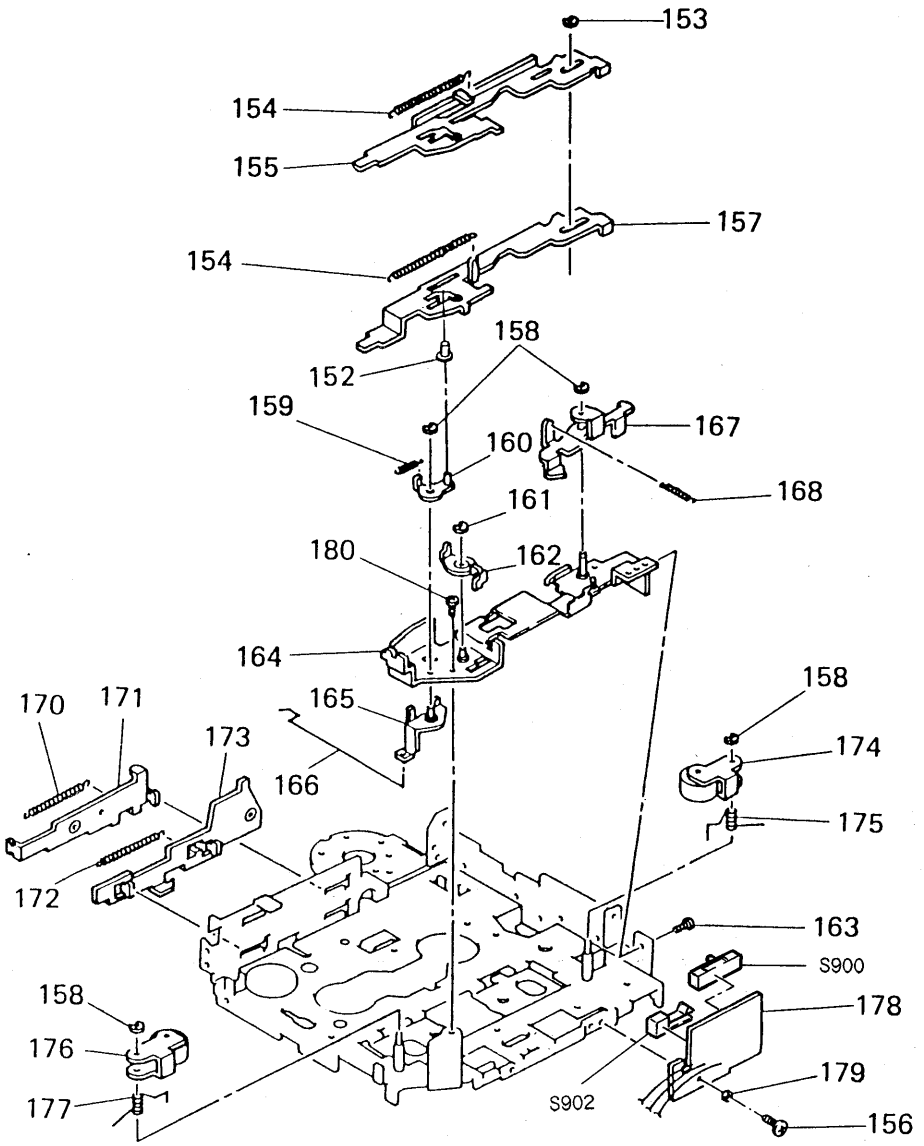
4-3. MD ASSEMBLY-1



No.	Part No.	Description	Remarks
101	3-392-969-01	LINK, RETURN	
102	7-624-104-04	STOP RING 2.0, TYPE -E	
103	⋇3-392-932-01	PLATE, CENTER	
104	3-392-961-01	SPRING (B)	
105	3-392-953-01	SPRING	
106	⋇3-392-973-01	HANGER, CASSETTE	
107	3-392-972-01	HOOKER, TAPE	
108	⋇3-392-921-01	LOCK ASSY, EJECT CAM	
109	⋇3-392-968-01	CUSHION, C.H	
110	⋇3-392-977-01	HOLDER, CASSETTE	
111	3-392-985-02	RATCHET	
112	3-392-959-01	SPRING	
113	3-392-989-02	ARM, GEAR LOCK	
114	3-392-949-02	SPRING	
115	3-392-937-01	GEAR (B)	
116	3-392-936-01	GEAR (A)	

No.	Part No.	Description	Remarks
117	3-570-615-00	POLY-WASHER (DIA.1.2)	
118	3-392-915-01	GEAR, IDLE	
119	3-392-986-01	ARM, SENSOR	
120	4-908-792-31	SCREW (B2) (M2X4), TAPPING	
121	3-392-944-01	COLLAR (CELECTER GEAR)	
122	3-392-987-01	GEAR, SELECTOR	
123	3-392-960-01	SPRING	
124	3-676-387-00	POLY-SLIDER (DIA.1.6)	
125	3-392-990-01	GEAR, DETECTION	
126	3-392-946-01	COLLAR, SWITCH ARM	
127	3-392-910-01	SPINDLE ASSY, REEL	
128	3-392-940-01	CAM, DETECTION	
129	3-392-964-01	SPRING, TENSION	
130	⋇3-392-976-01	BASE ASSY, REEL	
131	⋇3-392-982-01	ARM, SWITCH	
132	⋇4-908-792-11	SCREW (B2X3), TAPPING, P1	

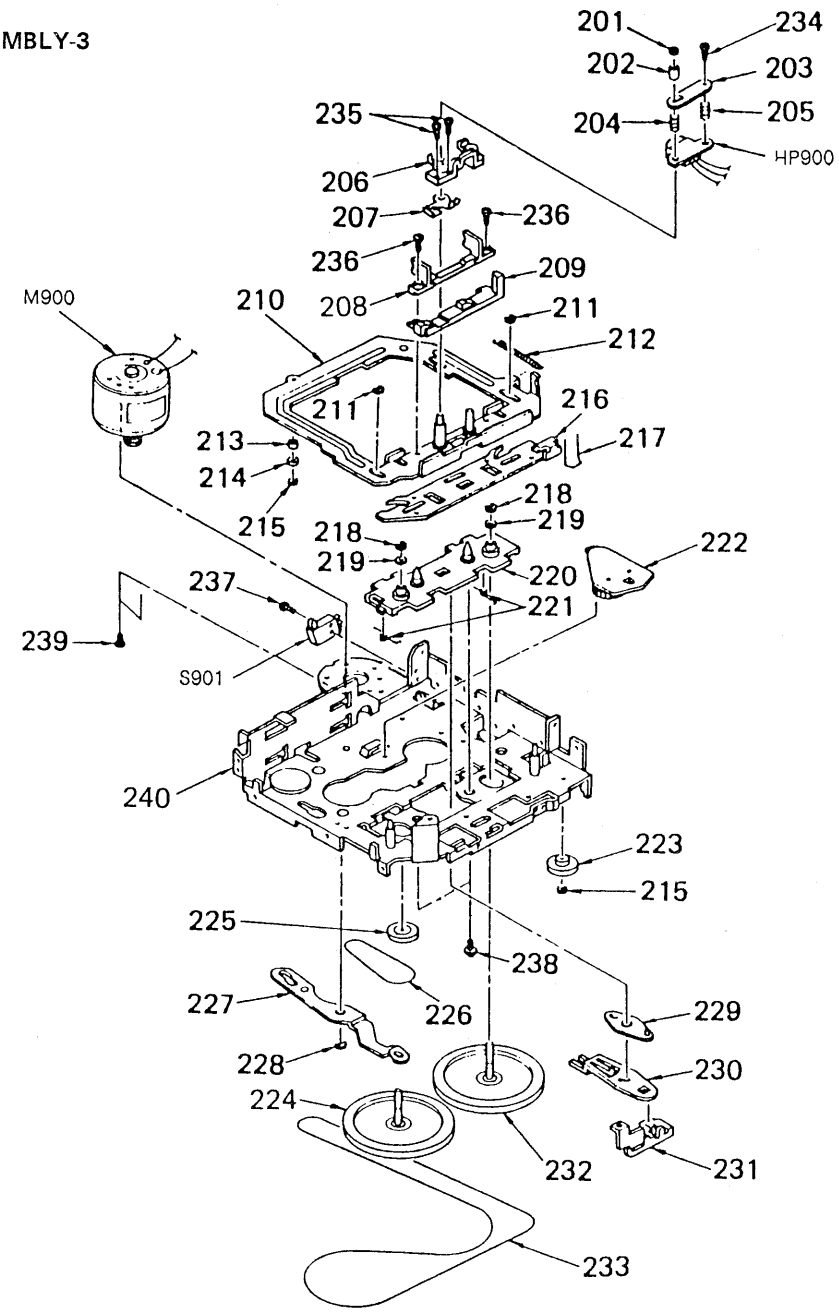
4-4. MD ASSEMBLY-2



No.	Part No.	Description	Remarks
152	3-392-994-01	ROLLER, PROGRAM	
153	7-624-104-04	STOP RING 2.0, TYPE -E	
154	3-392-948-01	SPRING	
155	*3-392-991-01	LEVER (Z), FF	
156	4-908-792-51	SCREW (+B 2X5), TAPPING, P1	
157	*3-392-992-01	LEVER (Z), REW	
158	7-624-102-04	STOP RING 1.5, TYPE -E	
159	3-392-954-01	SPRING	
160	*3-392-924-01	ARM ASSY, PROGRAM	
161	7-624-105-04	STOP RING 2.3, TYPE -E	
162	*3-392-933-01	LEVER (B), CHANGE	
163	7-621-555-10	SCREW +K 2X3	
164	3-392-993-01	BRACKET ASSY, LEVER	
165	*3-392-920-01	LEVER (A) ASSY, CHANGE	
166	3-392-966-01	LINK, SELECTOR	

No.	Part No.	Description	Remarks
167	*3-392-935-01	ARM, LOCK	
168	3-392-917-01	SPRING	
170	3-392-950-01	SPRING	
171	*3-392-978-01	LEVER, EJECT	
172	3-392-951-01	SPRING	
173	*3-392-929-01	CAM ASSY, EJECT	
174	*3-392-928-01	ARM (F) ASSY, PINCH	
175	3-392-957-01	SPRING (F)	
176	*3-392-927-01	ARM (R) ASSY, PINCH	
177	3-392-958-01	SPRING (R)	
178	3-392-970-01	CHASSIS, SWITCH	
179	7-623-205-22	SW 2, TYPE 2	
180	7-621-255-25	SCREW +PTT 2X4 (S)	
S900	1-554-814-11	SWITCH, SLIDE (FWD/REV)	
S902	1-571-522-11	SWITCH, LEAF(MUTE)	

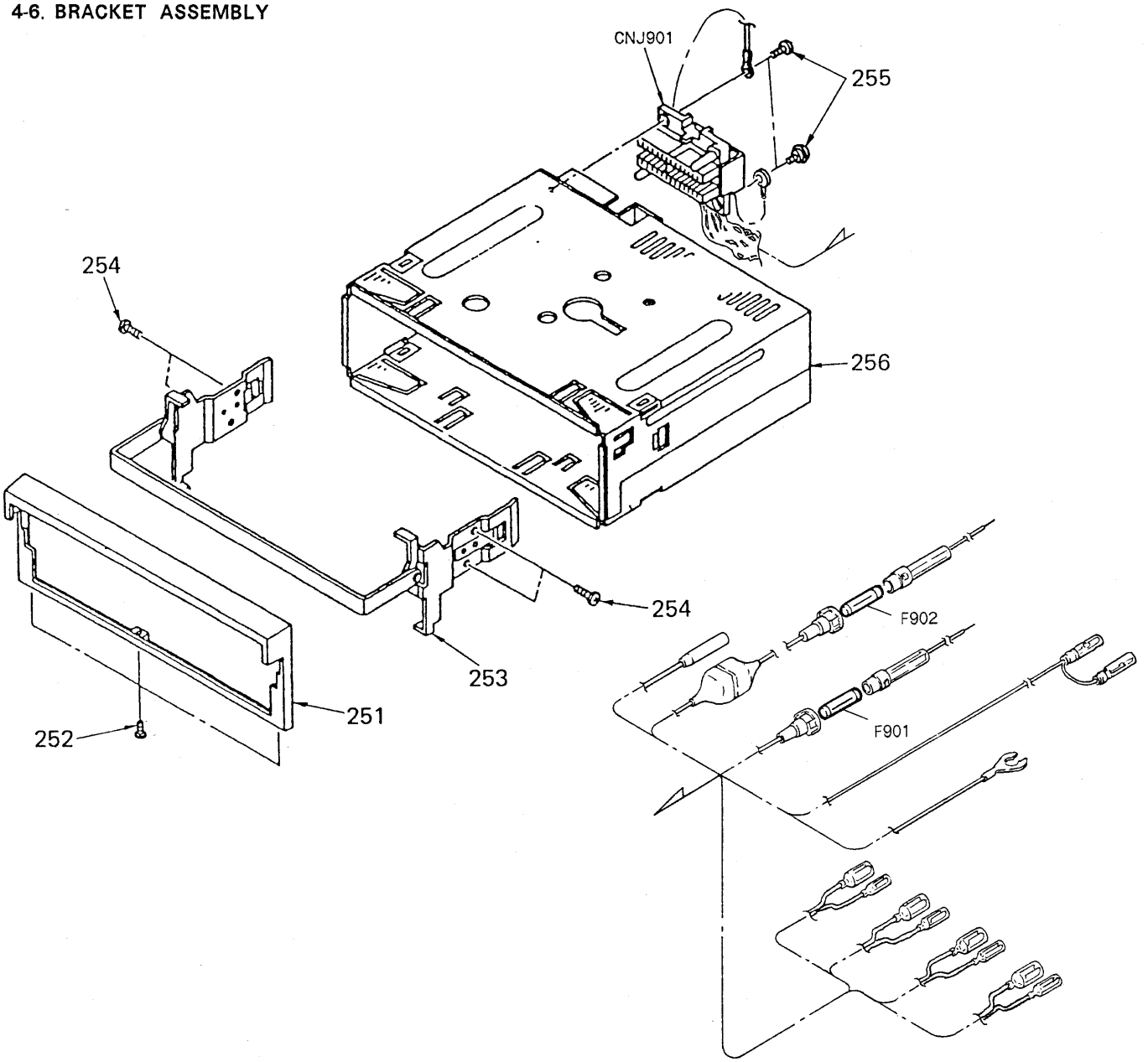
4-5. MD ASSEMBLY-3



No.	Part No.	Description	Remarks
201	3-676-387-00	POLY-SLIDER (DIA.1.6)	
202	3-392-943-01	ROLLER, FF	
203	⋇3-392-930-01	RETAINER, SPRING	
204	3-392-956-01	SPRING (B)	
205	3-392-955-01	SPRING (A)	
206	3-392-988-01	ARM, ADJUSTOR	
207	3-392-931-01	SEAM, ADJUSTOR	
208	3-392-984-01	GUIDE, TAPE	
209	3-392-971-01	LINK, ADJUSTOR	
210	⋇3-392-975-02	PLATE ASSY, HEAD	
211	7-624-105-04	STOP RING 2.3, TYPE -E	
212	3-392-952-01	SPRING	
213	3-392-942-01	ROLLER (B), H.P	
214	3-392-945-01	ROLLER (A), H.P	
215	3-570-615-00	POLY-WASHER (DIA.1.2)	
216	⋇3-392-919-01	ARM ASSY, F,R SELECTION	
217	3-392-962-01	SPRING	
218	3-590-768-00	RING (A), E	
219	3-701-437-11	POLY-SLIDER (A)	
220	3-392-914-01	BRACKET ASSY, CM	
221	3-392-963-01	SPRING (R)	
222	3-392-916-01	ARM ASSY, TU GEAR	

No.	Part No.	Description	Remarks
223	3-392-941-01	PULLEY (A), IDLE	
224	3-392-995-02	FLYWHEEL ASSY (R)	
225	3-392-938-01	GEAR, PULLY	
226	3-392-965-01	BELT (B), SUB	
227	⋇3-392-979-01	LEVER, REVERSE	
228	7-624-104-04	STOP RING 2.0, TYPE -E	
229	⋇3-392-925-01	ARM (A) ASSY, F.R	
230	⋇3-392-939-01	ARM, FF	
231	⋇3-392-934-01	ARM (B), F.R	
232	3-392-926-02	FLYWHEEL ASSY	
233	3-392-967-01	BELT, MAIN	
234	7-627-553-48	SCREW, PRECISION +P 2X4	
235	3-392-909-01	SCREW, AZIMUTH ADJUSTMENT	
236	7-621-255-25	SCREW +PTT 2X4 (S)	
237	3-318-203-11	SCREW (B1.7X6), TAPPING	
238	3-392-918-01	SCREW, EJECT HOOK	
239	7-627-853-17	PRECISION SCREW +P 2X2.2 TYPE3	
240	⋇3-392-974-01	CHASSIS ASSY, MAIN	
HP900	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
M900	3-392-908-02	MOTOR ASSY	
S901	1-554-790-11	SWITCH, POWER (TAPE/RADIO)	

4-6. BRACKET ASSEMBLY



No.	Part No.	Description	Remarks
251	3-340-640-11	FRAME, ORNAMENTAL	
252	7-627-553-38	SCREW, PRECISION +P 2X3	
253	✱X-3393-001-1	HANDLE ASSY	
254	3-329-814-01	SCREW (M4X6), SPECIAL PAN (+)	
255	7-682-548-04	SCREW +B 3X8	
256	✱X-3340-603-3	BRACKET ASSY, SECURITY	
CNJ901	1-575-909-XX	CORD (WITH CONNECTOR) (SOCKET)	
F901	1-532-360-XX	FUSE(1A)	
F902	1-532-422-00	FUSE(6.3A)	

SECTION 5
ELECTRICAL PARTS LIST

CONTROL | LAMP | MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA....: μA...., uPA....: μPA....
  uPB....: μPB...., uPC....: μPC....
  uPD....: μPD....
- CAPACITORS
  uF: μF
- COILS
  uH: μH

Ref. No.	Part No.	Description			Remark
*	1-636-637-11	CONTROL BOARD			
		**********			
		< DIODE >			
D050	8-719-920-80	DIODE GL-1HY1			
D051	8-719-920-80	DIODE GL-1HY1			
D052	8-719-920-80	DIODE GL-1HY1			
D055	8-719-920-80	DIODE GL-1HY1			
D056	8-719-920-80	DIODE GL-1HY1			
D057	8-719-920-80	DIODE GL-1HY1			
D058	8-719-920-80	DIODE GL-1HY1			
D059	8-719-920-80	DIODE GL-1HY1			
D060	8-719-920-80	DIODE GL-1HY1			
D061	8-719-920-80	DIODE GL-1HY1			
D062	8-719-920-80	DIODE GL-1HY1			
D063	8-719-920-80	DIODE GL-1HY1			
D064	8-719-920-80	DIODE GL-1HY1			
D065	8-719-920-80	DIODE GL-1HY1			
D066	8-719-920-80	DIODE GL-1HY1			
D067	8-719-920-80	DIODE GL-1HY1			
D068	8-719-920-80	DIODE GL-1HY1			
		< RESISTOR >			
R050	1-249-411-11	CARBON	330	5% 1/4W	
R053	1-249-411-11	CARBON	330	5% 1/4W	
R054	1-247-822-11	CARBON	430	5% 1/4W	
R055	1-249-411-11	CARBON	330	5% 1/4W	
R056	1-249-411-11	CARBON	330	5% 1/4W	
R057	1-216-198-00	METAL CHIP	1K	5% 1/8W	
R058	1-216-198-00	METAL CHIP	1K	5% 1/8W	
R059	1-216-198-00	METAL CHIP	1K	5% 1/8W	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S050	1-554-813-41	SWITCH, KEY BOARD (MAN +)	
S051	1-554-813-41	SWITCH, KEY BOARD (MAN -)	
S052	1-554-813-41	SWITCH, KEY BOARD (SEEK +)	
S053	1-554-813-41	SWITCH, KEY BOARD (SEEK -)	
S054	1-554-813-41	SWITCH, KEY BOARD (M. SCAN/A. MEM)	
S055	1-554-813-41	SWITCH, KEY BOARD (M 1)	
S056	1-554-813-41	SWITCH, KEY BOARD (M 2)	
S057	1-554-813-41	SWITCH, KEY BOARD (M 3)	
S058	1-554-813-41	SWITCH, KEY BOARD (M 4)	
S059	1-554-813-41	SWITCH, KEY BOARD (M 5)	
S060	1-554-813-41	SWITCH, KEY BOARD (M 6)	
S061	1-554-813-41	SWITCH, KEY BOARD (FM/MW/LW)	
**********			
*	1-636-638-11	LAMP BOARD	
		**********	
		< PILOT LAMP >	
PL001	1-518-671-11	LAMP, PILOT	
**********			
*	A-3273-220-A	MAIN BOARD, COMPLETE	
		**********	
*	3-363-131-01	FIXER, IC	
		< BATTERY >	
BT001	1-528-225-11	BATTERY, LITHIUM	
		< CAPACITOR >	
C001	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	

MAIN

Ref. No.	Part No.	Description			Remark
C002	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C003	1-131-349-00	TANTALUM	2.2uF	10%	35V
C004	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C005	1-126-163-11	ELECT	4.7uF	20%	50V
C006	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C007	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C008	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C009		ELECT	100uF	20%	16V
C010	1-163-161-00	CERAMIC CHIP	15PF	5%	50V
C011	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C150	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C151	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C152	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C153	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C154	1-126-163-11	ELECT	4.7uF	20%	50V
C155	1-126-160-11	ELECT	1uF	20%	50V
C156	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C157	1-126-160-11	ELECT	1uF	20%	50V
C158	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C159	1-163-150-00	CERAMIC CHIP	3PF	0.25PF	50V
C160	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C161	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C162	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C163	1-163-077-00	CERAMIC CHIP	0.1uF	10%	50V
C170	1-163-077-00	CERAMIC CHIP	0.1uF	10%	50V
C171	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C172		CERAMIC	15PF		
C201	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C202	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
C203	1-124-589-11	ELECT	47uF	20%	16V
C204	1-163-056-00	CERAMIC CHIP	0.0056uF	10%	50V
C205	1-124-463-00	ELECT	0.1uF	20%	50V
C206		FILM	390PF	5%	50V
C207	1-124-463-00	ELECT	0.1uF	20%	50V
C208	1-124-464-11	ELECT	0.22uF	20%	50V
C209	1-124-464-11	ELECT	0.22uF	20%	50V
C210	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C211	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C212	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C213	1-163-053-00	CERAMIC CHIP	0.0033uF	10%	50V
C214	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C215	1-126-163-11	ELECT	4.7uF	20%	50V
C216	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C217	1-163-074-00	CERAMIC CHIP	0.033uF		50V
C218	1-126-163-11	ELECT	4.7uF	20%	50V
C230	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C231	1-126-160-11	ELECT	1uF	20%	50V
C240	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C241	1-126-160-11	ELECT	1uF	20%	50V

Ref. No.	Part No.	Description			Remark
C300	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C301	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C302	1-124-234-00	ELECT	22uF	20%	16V
C303	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C304	1-163-187-00	CERAMIC CHIP	180PF	5%	50V
C305		CERAMIC CHIP	27PF	5%	50V
C306	1-136-015-00	FILM	510PF	5%	50V
C307	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C308	1-124-589-11	ELECT	47uF	20%	16V
C309	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C311	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C312	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C313	1-126-160-11	ELECT	1uF	20%	50V
C314	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C315	1-163-076-00	CERAMIC CHIP	0.068uF		50V
C316	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C317	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C318	1-124-465-00	ELECT	0.47uF	20%	50V
C319	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C320	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C321	1-163-074-00	CERAMIC CHIP	0.033uF		50V
C322	1-126-176-11	ELECT	220uF	20%	10V
C323	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C324	1-126-162-11	ELECT	3.3uF	20%	50V
C325	1-163-169-00	CERAMIC CHIP	33PF	5%	50V
C350	1-163-199-00	CERAMIC CHIP	560PF	10%	50V
C351	1-126-154-11	ELECT	47uF	20%	6.3V
C352	1-126-160-11	ELECT	1uF	20%	50V
C353	1-163-199-00	CERAMIC CHIP	560PF	10%	50V
C354	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C355	1-126-160-11	ELECT	1uF	20%	50V
C356	1-124-589-11	ELECT	47uF	20%	16V
C357	1-126-176-11	ELECT	220uF	20%	10V
C360	1-163-199-00	CERAMIC CHIP	560PF	10%	50V
C361	1-126-154-11	ELECT	47uF	20%	6.3V
C362	1-126-160-11	ELECT	1uF	20%	50V
C363	1-163-199-00	CERAMIC CHIP	560PF	10%	50V
C364	1-163-063-00	CERAMIC CHIP	0.022uF		50V
C365	1-126-160-11	ELECT	1uF	20%	50V
C420	1-126-160-11	ELECT	1uF	20%	50V
C421	1-126-160-11	ELECT	1uF	20%	50V
C430	1-126-160-11	ELECT	1uF	20%	50V
C431	1-126-160-11	ELECT	1uF	20%	50V
C451		CERAMIC CHIP	0.0082uF	10%	25V
C452	1-163-211-00	CERAMIC CHIP	0.0018uF	10%	50V
C461		CERAMIC CHIP	0.0082uF	10%	25V
C462	1-163-211-00	CERAMIC CHIP	0.0018uF	10%	50V
C470	1-124-234-00	ELECT	22uF	20%	16V
C500	1-163-056-00	CERAMIC CHIP	0.0056uF	10%	50V

Ref. No.	Part No.	Description			Remark
C501	1-124-257-00	ELECT	2.2uF	20%	50V
C502	1-124-234-00	ELECT	22uF	20%	16V
C503	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C504	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C510	1-163-056-00	CERAMIC CHIP	0.0056uF	10%	50V
C511	1-124-257-00	ELECT	2.2uF	20%	50V
C512	1-124-234-00	ELECT	22uF	20%	16V
C513	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C514	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C515	1-124-584-00	ELECT	100uF	20%	10V
C600	1-124-589-11	ELECT	47uF	20%	16V
C601	1-126-176-11	ELECT	220uF	20%	10V
C602	1-124-584-00	ELECT	100uF	20%	10V
C603	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C604	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C605	1-124-556-11	ELECT	2200uF	20%	16V
C606	1-126-163-11	ELECT	4.7uF	20%	50V
C607	1-126-176-11	ELECT	220uF	20%	10V
C608	1-126-163-11	ELECT	4.7uF	20%	50V
C610	1-124-589-11	ELECT	47uF	20%	16V
C611	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C700	1-126-157-11	ELECT	10uF	20%	16V
C702	1-124-234-00	ELECT	22uF	20%	16V
C703	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C704	1-126-163-11	ELECT	4.7uF	20%	50V
C705	1-126-163-11	ELECT	4.7uF	20%	50V

< FILTER >

CF150	1-567-389-11	FILTER, CERAMIC
CF300	1-577-103-11	VIBRATOR, CERAMIC
CF301	1-577-100-11	FILTER, CERAMIC

< CONNECTOR >

CNJ1	* 1-565-555-11	HOUSING, CONNECTOR (PC BOARD) 25P

< DIODE >

D001	8-719-109-84	DIODE	RD5.1ESB1
D002	8-719-911-19	DIODE	1SS119
D003	8-719-911-19	DIODE	1SS119
D004	8-719-911-19	DIODE	1SS119
D005	8-719-911-19	DIODE	1SS119
D006	8-719-911-19	DIODE	1SS119
D007	8-719-911-19	DIODE	1SS119
D008	8-719-911-19	DIODE	1SS119
D009	8-719-911-19	DIODE	1SS119
D010	8-719-911-19	DIODE	1SS119
D011	8-719-911-19	DIODE	1SS119
D012	8-719-104-10	DIODE	1SS99
D013	8-719-911-19	DIODE	1SS119
D014	8-719-109-84	DIODE	RD5.1ESB1
D017	8-719-911-19	DIODE	1SS119
D019	8-719-911-19	DIODE	1SS119
D150	8-719-911-19	DIODE	1SS119
D301	8-719-110-43	DIODE	RD16ESB
D302	8-719-110-43	DIODE	RD16ESB
D303	8-719-903-24	DIODE	SVC321SP-A2
D304	8-719-903-24	DIODE	SVC321SP-A2
D305	8-719-903-24	DIODE	SVC321SP-A2
D310	8-719-911-19	DIODE	1SS119
D320	8-719-911-19	DIODE	1SS119
D350	8-719-110-13	DIODE	RD9.1ES-B2
D600	8-719-910-68	DIODE	HZ6C2L
D601	8-719-970-02	DIODE	1SR139-400
D602	8-719-970-02	DIODE	1SR139-400
D603	8-719-110-17	DIODE	RD10ES-B2
D604	8-719-110-17	DIODE	RD10ES-B2
D605	8-719-911-55	DIODE	U05G
D606	8-719-911-19	DIODE	1SS119
D607	8-719-110-43	DIODE	RD16ESB
D608	8-719-911-19	DIODE	1SS119
D609	8-719-911-19	DIODE	1SS119
D700	8-719-911-19	DIODE	1SS119
D701	8-719-911-19	DIODE	1SS119
D702	8-719-911-19	DIODE	1SS119

< IC >

IC001	8-759-151-88	IC	uPD1708AG-895-00
IC150	8-759-804-73	IC	LA1140B
IC201	8-759-420-82	IC	AN7465S
IC300	1-806-985-11	IC	LA1135
IC350	8-759-105-60	IC	uPC1228HA
IC500	8-759-230-61	IC	TA8205AH
IC600	8-759-929-39	IC	BA6161M

< JUMPER RESISTOR >

JR1	1-216-296-00	METAL CHIP	0	5%	1/8W
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W
JR3	1-216-296-00	METAL CHIP	0	5%	1/8W
JR4	1-216-296-00	METAL CHIP	0	5%	1/8W
JR5	1-216-296-00	METAL CHIP	0	5%	1/8W
JR6	1-216-296-00	METAL CHIP	0	5%	1/8W
JR7	1-216-296-00	METAL CHIP	0	5%	1/8W
JR8	1-216-296-00	METAL CHIP	0	5%	1/8W
JR9	1-216-296-00	METAL CHIP	0	5%	1/8W
JR10	1-216-296-00	METAL CHIP	0	5%	1/8W
JR11	1-216-296-00	METAL CHIP	0	5%	1/8W

MAIN

Ref. No.	Part No.	Description	Remark
		< COIL >	
L151	1-410-312-11	INDUCTOR 0.22uH	
L300	1-410-324-11	INDUCTOR 4.7uH	
L301		INDUCTOR 47uH	
L601		INDUCTOR 4.7mH	
		< TRANSISTOR >	
Q001	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q002	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q003	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q004	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q005	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q006	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q007	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q008	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q009	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q010	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q011	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q012	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q013	8-729-143-53	TRANSISTOR 2SB810-F-HFE	
Q015	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q150	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q151	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q170	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q300	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q301	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q302	1-808-375-11	TRANSISTOR 2SK427	
Q303	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q304	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q305	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q306	8-729-114-09	TRANSISTOR FN1F4Z-M64	
Q420	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q430	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q450	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q460	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q600	8-729-142-27	TRANSISTOR 2SD1020F-HFE	
Q601	8-729-316-22	TRANSISTOR 2SC1162-C	
Q602	8-729-142-46	TRANSISTOR 2SC2001-L	
Q700	8-729-216-22	TRANSISTOR 2SA1162	
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q702	8-729-113-16	TRANSISTOR FA1A4P-L34	
Q710	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q711	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q720	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q721	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R001	1-249-421-11	CARBON 2.2K 5% 1/4W	
R002	1-216-194-00	METAL CHIP 680 5% 1/8W	
R003	1-249-417-11	CARBON 1K 5% 1/4W	
R004	1-216-188-00	METAL GLAZE 390 5% 1/8W	
R005	1-216-198-00	METAL CHIP 1K 5% 1/8W	
R006	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
R007	1-249-433-11	CARBON 22K 5% 1/4W	
R008	1-249-433-11	CARBON 22K 5% 1/4W	
R009	1-249-433-11	CARBON 22K 5% 1/4W	
R010	1-249-433-11	CARBON 22K 5% 1/4W	
R011	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
R012	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
R013	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	
R014		METAL CHIP 820 5% 1/8W	
R015	1-249-441-11	CARBON 100K 5% 1/4W	
R016	1-249-441-11	CARBON 100K 5% 1/4W	
R017	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R018	1-216-226-00	METAL GLAZE 15K 5% 1/8W	
R019	1-249-441-11	CARBON 100K 5% 1/4W	
R020	1-249-441-11	CARBON 100K 5% 1/4W	
R021	1-216-246-00	METAL GLAZE 100K 5% 1/8W	
R022	1-216-242-00	METAL GLAZE 68K 5% 1/8W	
R023	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
R024		METAL CHIP 820 5% 1/8W	
R025	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
R026	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
R027	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
R028	1-216-198-00	METAL GLAZE 1K 5% 1/8W	
R150	1-216-158-00	METAL GLAZE 22 5% 1/8W	
R151	1-216-188-00	METAL GLAZE 390 5% 1/8W	
R152	1-216-230-00	METAL GLAZE 22K 5% 1/8W	
R153	1-249-433-11	CARBON 22K 5% 1/4W	
R154		CARBON 18K 5% 1/4W	
R155	1-249-393-11	CARBON 10 5% 1/4W	
R156	1-216-238-00	METAL GLAZE 47K 5% 1/8W	
R157	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R158	1-216-242-00	METAL GLAZE 68K 5% 1/8W	
R159	1-216-238-00	METAL GLAZE 47K 5% 1/8W	
R160	1-216-238-00	METAL GLAZE 47K 5% 1/8W	
R171	1-249-433-11	CARBON 22K 5% 1/4W	
R172	1-249-433-11	CARBON 22K 5% 1/4W	
R201	1-216-238-00	METAL GLAZE 47K 5% 1/8W	
R202	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R203	1-216-210-00	METAL GLAZE 3.3K 5% 1/8W	
R204	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R205	1-216-202-00	METAL GLAZE 1.5K 5% 1/8W	
R206		METAL GLAZE 820K 5% 1/8W	
R207	1-216-218-00	METAL GLAZE 6.8K 5% 1/8W	
R208	1-216-246-00	METAL GLAZE 100K 5% 1/8W	
R209	1-216-246-00	METAL GLAZE 100K 5% 1/8W	

Ref. No.	Part No.	Description				Remark
R210	1-216-224-00	METAL GLAZE	12K	5%	1/8W	
R211	1-249-441-11	CARBON	100K	5%	1/4W	
R212	1-216-234-00	METAL GLAZE	33K	5%	1/8W	
R230	1-249-438-11	CARBON	56K	5%	1/4W	
R240	1-249-438-11	CARBON	56K	5%	1/4W	
R300	1-216-158-00	METAL GLAZE	22	5%	1/8W	
R301	1-216-246-00	METAL GLAZE	100K	5%	1/8W	
R302	1-216-230-00	METAL GLAZE	22K	5%	1/8W	
R303	1-216-246-00	METAL GLAZE	100K	5%	1/8W	
R304	1-247-887-00	CARBON	220K	5%	1/4W	
R305	1-216-254-00	METAL GLAZE	220K	5%	1/8W	
R306	1-216-254-00	METAL GLAZE	220K	5%	1/8W	
R307	1-216-254-00	METAL GLAZE	220K	5%	1/8W	
R308	1-216-270-00	METAL GLAZE	1M	5%	1/8W	
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R311	1-249-436-11	CARBON	39K	5%	1/4W	
R312	1-216-172-00	METAL CHIP	82	5%	1/8W	
R313	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R315	1-216-172-00	METAL CHIP	82	5%	1/8W	
R316	1-249-429-11	CARBON	10K	5%	1/4W	
R317	1-249-422-11	CARBON	2.7K	5%	1/4W	
R318	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R319	1-249-438-11	CARBON	56K	5%	1/4W	
R320	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R321	1-216-254-00	METAL GLAZE	220K	5%	1/8W	
R322	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W	
R350	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R351	1-216-218-00	METAL GLAZE	6.8K	5%	1/8W	
R352	1-216-252-00	METAL GLAZE	180K	5%	1/8W	
R353	1-249-415-11	CARBON	680	5%	1/4W	
R354	1-216-224-00	METAL GLAZE	12K	5%	1/8W	
R355	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R360	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R361	1-216-218-00	METAL GLAZE	6.8K	5%	1/8W	
R362	1-216-252-00	METAL GLAZE	180K	5%	1/8W	
R364	1-216-224-00	METAL GLAZE	12K	5%	1/8W	
R420	1-216-210-00	METAL CHIP	3.3K	5%	1/8W	
R421	1-216-254-00	METAL GLAZE	220K	5%	1/8W	
R422	1-216-180-00	METAL GLAZE	180	5%	1/8W	
R423	1-216-238-00	METAL GLAZE	47K	5%	1/8W	
R430	1-216-210-00	METAL CHIP	3.3K	5%	1/8W	
R431	1-216-254-00	METAL GLAZE	220K	5%	1/8W	
R432	1-216-180-00	METAL GLAZE	180	5%	1/8W	
R433	1-216-238-00	METAL GLAZE	47K	5%	1/8W	
R450	1-216-238-00	METAL GLAZE	47K	5%	1/8W	
R451	1-216-216-00	METAL GLAZE	5.6K	5%	1/8W	
R460	1-216-238-00	METAL GLAZE	47K	5%	1/8W	
R461	1-216-216-00	METAL GLAZE	5.6K	5%	1/8W	

Ref. No.	Part No.	Description				Remark
R470	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R500	1-249-421-11	CARBON	2.2K	5%	1/4W	
R501		METAL CHIP	2.2K	5%	1/8W	
R502		METAL CHIP	2.2K	5%	1/8W	
R503	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R504	1-249-451-11	CARBON	2.2	5%	1/4W	
R505	1-249-451-11	CARBON	2.2	5%	1/4W	
R510	1-249-421-11	CARBON	2.2K	5%	1/4W	
R511		METAL CHIP	2.2K	5%	1/8W	
R512		METAL CHIP	2.2K	5%	1/8W	
R513	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R514	1-249-451-11	CARBON	2.2	5%	1/4W	
R515	1-249-451-11	CARBON	2.2	5%	1/4W	
R516	1-249-429-11	CARBON	10K	5%	1/4W	
R600	1-216-224-00	METAL GLAZE	12K	5%	1/8W	
R601	1-249-393-11	CARBON	10	5%	1/4W	
R602	1-249-413-11	CARBON	470	5%	1/4W	
R603	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R604		CARBON	2.2	5%	1/4W	
R605	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R606		CARBON	2.2	5%	1/2W	
R607	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R608	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R609	1-216-194-00	METAL CHIP	680	5%	1/8W	
R610		CARBON	68	5%	1/4W	
R611	1-249-413-11	CARBON	470	5%	1/4W	
R612		CARBON	27	5%	1/2W	
R700	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R701	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R702	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R703	1-216-238-00	METAL GLAZE	47K	5%	1/8W	
R704	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R705	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W	
R706	1-249-424-11	CARBON	3.9K	5%	1/4W	
R707	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R708	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R709	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R711	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R720	1-216-222-00	METAL GLAZE	10K	5%	1/8W	

< SWITCH >

S001	1-553-906-00	SWITCH, SLIDE (ILLUMINATION SELECT)

< TRANSFORMER >

T150	1-404-903-11	TRANSFORMER, IF (FM IF)
T300	1-426-363-11	TRANSFORMER, HIGH FREQUENCY (MW RF1)
T301	1-426-364-11	TRANSFORMER, HIGH FREQUENCY (LW RF1)
T302	1-426-362-11	TRANSFORMER, HIGH FREQUENCY (MW RF2)
T303	1-426-365-11	TRANSFORMER, HIGH FREQUENCY (LW RF2)

MAIN SWITCH TONE

Ref. No.	Part No.	Description	Remark
T304	1-406-293-11	COIL (OSC)	
T305	1-404-796-11	TRANSFORMER, IF (AM IF)	
T306	1-404-795-11	TRANSFORMER, IF (AM IF)	
T307	1-406-288-11	COIL (OSC)	
		< TRIMMER >	
TC300	1-141-276-00	CAP, TRIMMER	
TC301	1-141-276-00	CAP, TRIMMER	
		< VARIABLE RESISTOR >	
VR150		RES, ADJ, CARBON 220K	
VR201		RES, ADJ, CARBON 10K	
VR300		RES, ADJ, CARBON 100K	
VR452		RES, VAR (VOL)	
		< VIBRATOR >	
XT001	1-567-713-11	VIBRATOR, CRYSTAL	
**********			
*	1-636-636-11	SWITCH BOARD	
		**********	
		< DIODE >	
D480	8-719-911-19	DIODE 1SS119	
		< TRANSISTOR >	
Q480	8-729-113-16	TRANSISTOR FA1A4P-L34	
		< RESISTOR >	
R182	1-216-190-00	METAL GLAZE 470 5% 1/8W	
R480	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R481	1-216-238-00	METAL GLAZE 47K 5% 1/8W	
R483	1-216-190-00	METAL GLAZE 470 5% 1/8W	
R484	1-216-190-00	METAL GLAZE 470 5% 1/8W	
R485	1-216-190-00	METAL GLAZE 470 5% 1/8W	
		< SWITCH >	
S480	1-572-252-21	SWITCH, PUSH (1 KEY) (LOUD)	
S481	1-572-252-21	SWITCH, PUSH (1 KEY) (MONO)	
**********			

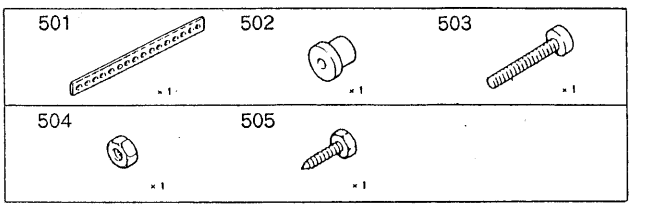
Ref. No.	Part No.	Description	Remark
*	1-636-635-11	TONE BOARD	
		**********	
		< CAPACITOR >	
C480	1-163-075-00	CERAMIC CHIP 0.047uF	50V
C490	1-163-075-00	CERAMIC CHIP 0.047uF	50V
		< VARIABLE RESISTOR >	
VR450	1-238-910-11	RES, VAR, CARBON 50K/50K (HI-FILTER)	
**********			

ACCESSORY & PACKING MATERIAL

	3-336-617-01	BAG, PROTECTION
	3-340-687-01	KNOB (HANDLE FITTING)
	3-363-544-01	INDIVIDUAL, CARTON
	3-396-448-01	CUSHION(UPPER)
	3-396-449-01	CUSHION(LOWER)
	3-752-349-11	MANUAL, INSTRUCTION (ENGLISH, GERMAN, RUSSIAN, POLISH)
	3-752-352-11	MANUAL, INSTRUCTION, FITTING (ENGLISH, GERMAN, RUSSIAN,POLISH)
	3-764-805-21	INSTRUCTION
	7-621-255-20	SCREW +P 2×4

MOUNTING HARDWARE

501	3-310-655-01	SUPPORT (ND), FITTING
502	*3-323-208-02	BUSHING, RUBBER
503	7-682-583-04	SCREW +P 5X40
504	7-684-025-04	N 5, TYPE 2
505	3-302-126-01	SCREW, TAPPING (DIA. 5X20)



9-956-083-11

Sony Corporation
Mobile Electronics Group

English
91G0214-1
Printed in Japan
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Published by Customer Relations and Service Group